

## SYSTEM AND METHOD FOR HEMISPHERE DISAMBIGUATION IN ELECTROMAGNETIC TRACKING SYSTEMS

### ABSTRACT OF THE DISCLOSURE

[53] An electromagnetic tracking system includes a transmitter assembly having a transmitter coil trio, a receiver assembly having a receiver coil trio, and a single coil mounted on one of the receiver assembly and the transmitter assembly. The single coil is positioned a fixed and known distance away from one of the receiver coil trio and the transmitter coil trio. When the receiver assembly is moved relative to the transmitter assembly, relative motion between at least two of the transmitter coil trio, the receiver coil trio and the single coil is asymmetrical, thereby generating different magnetic fields therebetween. The sensed magnetic field, or mutual inductances, between the transmitter assembly and the receiver assembly is different at each position. Thus, each position within a detectable area of the system is distinguishable.